

WHAT IS CLAIMED IS:

1 1. A branching passage assembly for an endoscope incorporating
2 a forked branching member internally of a casing of a manipulating
3 head assembly to connect a base end of a biopsy channel running
4 through an insertion tube of said endoscope with a biopsy channel
5 entrance way and a suction passage, characterized in that:

6 said forked branching member is retained in position by
7 threaded engagement with an inner end of a biopsy channel entrance
8 pipe fitted in said biopsy channel entrance way; and

9 said forked branching member is associated with restrictive
10 members arranged to restrict movements of said branching member in
11 all directions except a movement in a direction toward said biopsy
12 channel entrance pipe when said branching member is pulled toward
13 the latter for threaded engagement therewith.

1 2. A branching passage assembly as defined in claim 1, wherein
2 said casing of said manipulating head assembly is formed by joining a
3 main cover section and a grip cover section, and arranged to support a
4 manipulating member of an angulation control mechanism on said

5 main cover section and to accommodate said branching member
6 internally of said grip cover section.

1 3. A branching passage assembly as defined in claim 2, wherein
2 said branching member is located internally of passage-forming
3 structural members including first and second tubular members
4 provided internally of said casing of said manipulating head assembly
5 to extend from said main cover section to said grip cover section and
6 connected with each other through a reinforcing ring.

1 4. A branching passage assembly as defined in claim 3, further
2 comprising a notched void portion provided in part of said first tubular
3 member and said reinforcing ring, said second tubular member being
4 fitted on said reinforcing ring, said forked branching member having a
5 threaded connecting portion projected toward said biopsy channel
6 entrance pipe through said notched void portion, said restrictive
7 members being constituted by a pair of laterally projecting stopper
8 blades provided on said branching member, said stopper blades being
9 placed in said notched void portion and held in abutting engagement

10 with vertical and horizontal surfaces at notched portions of said
11 reinforcing ring within said second tubular member.

1 5. A branching passage assembly as defined in claim 3, wherein
2 said first and second tubular members are formed of a lightweight
3 metal, and said reinforcing ring is a high strength metal ring.

1 6. A branching passage assembly as defined in claim 1, wherein
2 said forked branching member is provided with a plural number of
3 connection points including a first connecting portion for connection of
4 a biopsy channel tube, a second connecting portion for connection of a
5 suction tube, and a third connecting portion for connection of a biopsy
6 channel entrance pipe.

1 7. A branching passage assembly as defined in claim 6, wherein
2 said third connecting portion is provided with an external screw on an
3 outer peripheral surface while said biopsy channel entrance pipe is
4 provided with an internal screw to be brought into threaded
5 engagement with said external screw of said third connecting portion.

1 8. A branching passage assembly as defined in claim 7, wherein
2 said biopsy channel entrance pipe is placed in said biopsy channel
3 entrance way on said manipulating head assembly and threaded onto
4 said third connecting portion, and a mouth piece with a plug member
5 is threaded into said biopsy channel entrance way with a fore end
6 portion thereof in fitting engagement with a rear or outer end portion
7 of said biopsy channel entrance pipe.

1 9. A branching passage assembly as defined in claim 8, wherein
2 passage-forming structural members are fitted in said casing of said
3 manipulating head assembly, and said restrictive members are
4 constituted by stopper portions formed integrally with said branching
5 member and adapted to restrict movements of said branching member
6 in upward, downward and forward directions, and said mouth piece is
7 fitted on said biopsy channel entrance pipe in such a way as to press
8 said restrictive members against a passage-forming structural member.

1 10. A branching passage assembly as defined in claim 9,

2 wherein said first connecting portion is formed with an external screw
3 portion on outer periphery thereof on the rear side of a tapered fore
4 end portion, said biopsy channel tube being fitted on said tapered fore
5 end portion of said first connecting portion and anchored in position
6 by a retaining nut threaded onto said external screw portion, and said
7 passage-forming structural member being provided with holes at
8 positions around said retaining nut thereby permitting to separate
9 said retaining nut from said external screw portion from outside of said
10 passage-forming structural member.